

CLAIMS

1. A subsea system for processing a fluid emanating from one or more subsea wells, comprising a fluid processing circuit and a base module (3) provided with at least one receiver (40) for receiving an insert module (4-8) comprising an appliance that forms part of the fluid processing circuit, the receiver (40) comprising a cavity (30) for accommodating the insert module (4-8), the insert module (4-8) being adapted to be mounted to the base module (3) by being lowered down substantially vertically into the cavity (30) of the receiver (40) through an opening at the upper part of the cavity (30) and demounted from the base module (3) by being lifted substantially vertically out of the cavity (30), the receiver (40) being provided with at least one fluid outlet (41) and at least one fluid inlet (42) adapted to be in fluid communication with a corresponding fluid inlet (51) and fluid outlet (52), respectively, of the insert module (4-8) when the insert module is mounted in the cavity (30) of the receiver (40), **characterized in** that the insert module (4-8) is provided with a flange (31), which is adapted to bear on a corresponding flange (32) of the receiver (40) when the insert module (4-8) is mounted therein, a watertight seal (33) being arranged between said flanges (31, 32) so as to seal the space between the receiver (40) and the part of the insert module (4-8) received therein from the surrounding sea water.
2. A subsea system according to claim 1, **characterized in** that the watertight seal (33) is a metal seal.
3. A subsea system according to claim 1 or 2, **characterized in** that the flange (32) of the receiver (40) is arranged to surround the opening at the upper part of the receiver (40).
4. A subsea system according to any of the preceding claims, **characterized in** that the flange (31) of the insert module (4-8) is arranged at the upper end thereof.

5. A subsea system according to any of the preceding claims, **characterized in** that the insert module (4-8) and the receiver (40) are designed to allow the corresponding fluid inlets and fluid outlets (42 and 52; 41 and 51) of the insert module (4-8) and the receiver (40) to be in fluid communication with each other when the insert module (4-8) is mounted in the receiver (40) irrespective of the mutual angle of rotation between the insert module (4-8) and the receiver (40) so as to allow the insert module (4-8) to be mounted in the receiver (40) in arbitrary angle of rotation in relation to the receiver.
6. A subsea system according to claim 5, **characterized in** that an inlet (52) or outlet (51) of the insert module (4-8) is in fluid communication with the corresponding inlet (42) or outlet (41) of the receiver (40) via a ring-shaped channel (60) when the insert module is mounted in the receiver (40).
7. A subsea system according to claim 6, **characterized in** that the centre axis of the ring-shaped channel (60) coincides with the centre axis of the insert module (4-8) when the insert module is mounted in the receiver (40).
8. A subsea system according to claim 6 or 7, **characterized in** that a wall (61) of the receiver (40) and/or a wall of the insert module (4-8) is provided with a ring-shaped recess (60) so as to form said ring-shaped channel.
9. A subsea system according to any of claims 6-8, **characterized in** that the ring-shaped channel (60) is formed between a lateral wall (62) of the insert module (4-8) and a corresponding lateral wall (61) of the receiver (40), sealing devices (63) being provided to form seals between said lateral walls (61, 62) in order seal the ring-shaped channel (60) from the surroundings when the insert module is mounted in the receiver (40).

10. A subsea system according to claim 9, **characterized in** that the respective sealing device (63) comprises a radially expandable, ring-shaped sealing member (64).
- 5 11. A subsea system according to claim 10, **characterized in** that the respective sealing device (63) comprises a displaceable wedge (65), preferably in the form of a split-ring, for expanding the associated sealing member (64) radially.
- 10 12. A subsea system according to claim 11, **characterized in** that the wedge (65) is hydraulically operated.
13. A subsea system according to any of claims 9-12, **characterized in** that the sealing devices (63) are arranged in the insert
15 module (4-8).
14. A subsea system according to any of the preceding claims, **characterized in** that the insert module (4-8) is rotational symmetric, the receiver cavity (30) having a corresponding
20 shape.
15. A subsea system according to any of the preceding claims, **characterized in** that a flow channel (70) is provided in the insert module (4-8) for allowing sea water to flow from the space
25 between the insert module (4-8) and the receiver (40) into the surrounding sea during the insertion of the insert module (4-8) into the receiver (40) and in the opposite direction during the withdrawal of the insert module (4-8) from the receiver (40).
- 30 16. A subsea system according to claim 15, **characterized in** that a cut-off valve (37) is provided in the flow channel (70).
17. A subsea system according to any of the preceding claims, **characterized in** that a male-shaped or female-shaped member (80) is arranged in the bottom of the insert module (4-8),
35 said male-shaped or female-shaped member (80) being adapted to fit into a corresponding female-shaped or male-

shaped member (81) arranged in the bottom of the receiver cavity (30) when the insert module (4-8) is mounted in the receiver (40).

- 5 18. A subsea system according to claim 17, **characterized in** that a sealing member (82) is arranged between the male-shaped or female-shaped member (80) of the insert module (4-8) and the corresponding member (81) of the receiver cavity (30).
- 10 19. A subsea system according to any of the preceding claims, **characterized in** that a guiding member (90) having the shape of a truncated cone is arranged around the upper opening of the receiver cavity (30), and that the system comprises a mounting tool (91) intended to carry the insert module (4-8)
- 15 during the lowering thereof to the receiver (40) and/or the lifting thereof from the receiver (40), said mounting tool (91) being provided with a lower part (92) having the shape of a truncated cone that fits into the guiding member (90) of the receiver (40).
- 20 20. A subsea system according to claim 19, **characterized in** that the mounting tool (91) is provided with a hoisting device (93) for lowering an insert module (4-8) out of the mounting tool (91) and down into the receiver cavity (30) and/or lifting an insert module (4-8) out of the receiver cavity (30) and up into the mounting tool (91).
- 25 21. A subsea system according to any of the preceding claims, **characterized in** that the system is provided with an insert module (5, 7, 8) comprising cyclonic devices for fluid separation.
- 30 22. A subsea system according to any of the preceding claims, **characterized in** that the system is provided with an insert module (6) comprising a water pump.
- 35

23. A subsea system according to any of the preceding claims, **characterized in** that the system is provided with an insert module (4) comprising a ball valve.